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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,067	11/25/2003	Chikaroku Yamashita		4201

7590 11/14/2006  
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3550 BELL ROAD  
MINOOKA, IL 60447

EXAMINER
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MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/720,067	Applicant(s) YAMASHITA ET AL.	
	Examiner Krishnan S. Menon	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

Claims 8-12 are pending in the RCE 10/27/06

### *Specification*

The pipe 6 is described as both “air deflate pipe” and “drain pipe” in several places in the specification. Also pipe 9 is identified as drain pipe. Applicant must correct the specification, without introducing new matter, to remove these discrepancies.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites:

~~a micro filter device, disposed on said filter device such that an upper surface of said micro filter device is tilted at an angle relative towards a surface of said filter device, wherein said tilted surface of said micro filter device faces a wastewater inflow~~

The “microfilter device” and “an upper surface of said microfilter device” are not clearly defined in the claim or the specification. If it were assumed as the “microfilter

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filter sieve 2" as disclosed in page 5 last paragraph, then the entire sieve is described as tilted, not just 'an upper surface' of the sieve.

Claim 12 recites surface of said micro filter device as facing a opposite direction to a surface of said filter device adjacent to it. It is unclear which surface is the 'surface ... adjacent to it'. For examination, the micro filter surface is assumed as facing an opposite direction with respect to a second micro filter surface next to or adjacent to it.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim limitation "tilted at an angle ... to facilitate convectional flow.." does not appear to have adequate supporting disclosure in the specification and claims as originally filed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 8-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (US 5,451,317).

Ishida teaches a submerged filter in a treatment tank with microporous membranes (which is implied for the process of wastewater treatment) attached to plurality of filter supports (filter device), raw fluid inlet, filtrate removal, bubbling air, capable of continuous process, sediment removal from the bottom, all as claimed – see figures, particularly, figure 1, abstract, and column 2 lines 16-60. Regarding the tilt angle relative to a surface of the device, the microfilter surfaces of the device are shown as being vertical in the reference. Applicant's disclosure and figures describe convectional currents caused by air bubbles protecting the membrane surface from deposits on the membrane (page 7 of the specification). Such convectional currents is taught by the reference – see figure 4, flow marked B. The bubbles also move along the surface of the membrane. While the tilt in applicant's the filter sieve would produce some deflection to the flow to assist the convection, it does not seem to be very critical to the convectional flow from applicant's disclosure; and since no other criticality is given for the "tilt", it is considered as only a minor change in shape, and is not given any patentable weight. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device

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was not patentably distinct from the prior art device. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.).

It may also be noted that providing lamella plates at an angle is known for improving floatation in the art of floatation process – see figure 4, US 5,863,441 to Krofta, or figure 2 and 4 of US 6,890,431 to Eades, et al.

The reference teaches double-sided membranes, so each membrane has a surface opposite to it.

2. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ookata (US 6,284,135)

Ookata teaches a submerged filter in a treatment tank with flat (or plate type) microporous membranes (column 5 lines 18-25: ultrafiltration or precision filtration membranes; membrane element 51 has flat membrane 52) attached to plurality of filter supports, raw fluid inlet, filtrate removal, bubbling air providing convection as seen in figure 6 and 7, capable of continuous process, sediment removal from the bottom, all as claimed – see figures and abstract. Membranes are made of resin material (hollow yarn, or hollow fiber membranes – figure 16, column 9 lines 45-60, which are well-known synthetic resin membranes; flat resinous membrane materials for wastewater filtration and ultrafiltration are also well known). The membrane is attached in two

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directions – see figures 4,5 and 16. With respect to the tilt angle, the reference does not specifically teach any tilt angle. However, the reference teaches significant amount of convection in several different patterns in figures 6-15 and the corresponding teaching in column 5 line 9 – column 9 line 40. Also, the “approximate 5° ” tilt as described in page 5, last paragraph, of applicant’s specification does not have any specific range associated with it; the vertical arrangement of the reference would be close enough to the 5° tilt to read on to such a tilt. The claims recite the tilt as facilitating the convective flow. However, page 7 of the specification discloses “the air bubbles” and wastewater inlet flow as providing the convective flow. While the tilt in applicant’s the filter sieve would produce some deflection to the flow to assist the convection, it does not seem to be very critical to the convective flow; therefore, the tilt is considered as only a minor change in shape, and is not given any patentable weight. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container

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was significant.). Applicant has not provided any evidence to overcome the obviousness of the tilt angle.

### ***Response to Arguments***

Applicant's arguments filed 10/27/06 have been fully considered but they are not persuasive.

Arguments are addressed in the rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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A handwritten signature in black ink, appearing to read 'K S Menon', written in a cursive style.

11/12/06

Krishnan S Menon  
Primary Examiner  
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